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UPDATES: Area Studies

Data updates from the Resources and Technology Division

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Albemarle-Pamlico Drainage Area Study Links Agricultural Production and Natural Resource Data

- Study area covers 27,500 square miles of southern Virginia and northeastern North Carolina. About 25 percent of the area is agricultural land with the majority in corn, soybeans, cotton, peanuts, tobacco, and wheat.
- About one-fourth of the agricultural land is classified as highly erodible and about 36 percent as having a high to very high leaching potential.
- Potential for erosion is lessened by a large percentage of highly erodible land in pasture and hay. Soil or tissue testing to guide nutrient use occurred on 20-50 percent of cropped acres.

This issue of RTD UPDATES summarizes the Albemarle-Pamlico Drainage Area survey data. It presents initial information on conservation practices, pest and nutrient management practices, chemical use, and tillage methods. In addition, soil characteristics were used to determine erodibility and leaching potential. The Area Studies project is a data collection and modeling effort designed to assess national policy impacts. The focus is on the development of multi-year, farm-level data that link production activities to environmental characteristics for

selected regions. The effort involves the Economic Research Service (ERS), the Soil Conservation Service (SCS), U.S. Geological Survey (USGS), and the National Agricultural Statistics Service (NASS).

The Albemarle-Pamlico Drainage Area was one of four areas chosen in 1992. Others were the Iowa/Illinois Basins, the Upper Snake River Basin Area (Idaho), and the Georgia/Florida Coastal Plains. These sites were selected from those included in USGS's National Water Quality Assessment Program and were areas with significant cropland and agricultural chemical use levels.

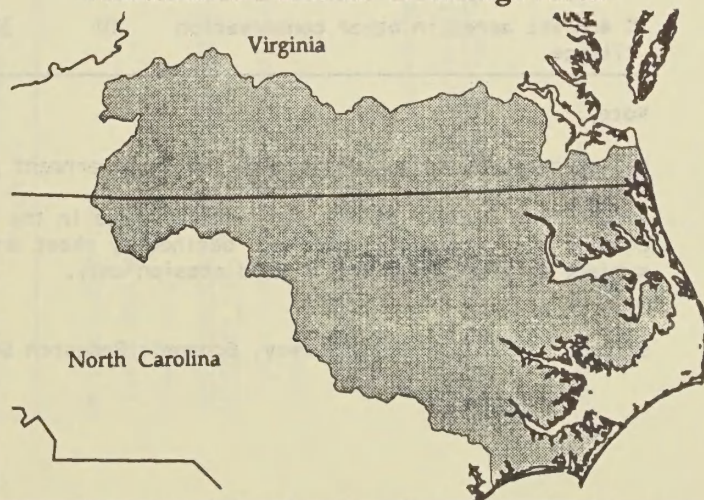
A survey in each area collected detailed information on production technologies, cropping systems, and agricultural practices at both the field and whole farm level. The survey sample points were chosen to correspond with National Resource Inventory (NRI) sample points. SCS conducts an NRI every 5 years, collecting soil, water, and other natural resource data for nearly a million sample sites nationwide. The use of the NRI points establishes a link between production activities and resource characteristics.

Contact: R. Keim or L. Nodine, RTD (202) 219-0402.

About RTD UPDATES

RTD UPDATES is a semimonthly series featuring data relating to agricultural resources, the environment, food safety, and technology. These UPDATES report recent data from surveys of farm operators and others knowledgeable about changing agricultural resource conditions, with only minimal interpretation or analysis. Please contact the individual listed at the end of the text for additional information about the data in this UPDATE. If you would like to be added to the mailing list or have other questions about RTD UPDATES, contact Richard Magleby, (202) 219-0436.

Albemarle-Pamlico Drainage Area



Albemarle-Pamlico Drainage Area: Major crops and uses, 1992

Item	Corn	Cotton	Hay	Peanuts	Soybeans	Tobacco	Wheat	Pasture
Acres in crop	821,556	316,911	268,797	222,830	943,603	194,297	440,560	671,202
% Acres in crop	20	8	6	5	23	5	11	16
Yield per acre	128 bu.	687 lbs.	2 tons	31 cwt.	30 bu.	23 cwt.	51 bu.	N/A
Commodity program acres	338,920	162,317	N/A	222,830	N/A	190,197	98,449	N/A

The total number of acres in agricultural land in the Albemarle-Pamlico Drainage Area is 4,202,100. N/A indicates not applicable.

Albemarle-Pamlico Drainage Area: Conservation practice use, 1992

Item	Corn	Cotton	Hay	Peanuts	Soybeans	Tobacco	Wheat	Pasture	All
Percent of acres in crop									
Conservation plan	30	57	41	58	41	75	49	21	42
Chiseling and subsoiling	54	57	*	32	38	50	32	0	31
Conservation cover	14	17	12	40	0	26	21	6	16
Cover and green manure crop	4	5	8	25	5	22	12	*	8
Critical area stabilization	4	5	*	8	2	*	*	*	3
Crop residue use	41	42	*	36	35	17	34	*	25
Grassed waterway	12	16	6	27	12	35	16	*	13
Grasses and legumes in rotation	4	*	6	7	6	5	9	*	4
Pasture and hay management	*	*	20	*	*	*	0	23	6
Planned grazing system	*	*	*	0	*	0	0	22	4
No-till	10	4	3	0	16	0	19	*	6
Other conservation tillage	10	1	3	11	8	1	7	*	6

* Indicates too few observations for estimation. N/A indicates not applicable. Other conservation tillage includes ridge, mulch and other conservation tillage.

Albemarle-Pamlico Drainage Area: Land erodibility, 1992

Item	Corn	Cotton	Hay	Peanuts	Soybeans	Tobacco	Wheat	Pasture
% Highly erodible land (HEL)	5	6	54	6	8	32	23	62
% HEL acres in no-till	38	0	2	0	13	0	6	0
% HEL acres in other conservation tillage	11	20	2	0	12	0	4	0
% HEL acres in commodity program	29	10	N/A	99	N/A	99	10	N/A
% Non-HEL acres in no-till	8	4	3	0	17	0	23	2
% Non-HEL acres in other conservation tillage	10	30	3	12	7	0	8	0

Notes:

HEL operated by farmers participating in government programs is subject to conservation compliance.

Twenty-five percent of all agricultural land in the Albemarle-Pamlico Study Area is classified as highly erodible. Erodiability levels presented are defined by sheet and rill erosion only. Less than 1 percent of the area would be subject to compliance due to wind erosion only.

Source: 1992 Area Study Survey, Economic Research Service, USDA.

Albemarle-Pamlico Drainage Area: Pest management practices, 1992

Practice	Percent of acres in crop				
	Corn	Cotton	Peanuts	Soybeans	Tobacco
<u>Type of pest management:</u>					
Biological pest control	4	26	7	4	4
Pest resistant varieties	28	20	32	29	51
Pruning and canopy mgmt.	3	17	*	2	10
Pheromones	5	48	12	7	*
Destroy residues for host-free zone	58	74	70	55	64
Rotations	83	78	96	78	85
Pest control factor in timing/location	27	33	20	20	16
<u>Source of pest management advice:</u>					
On-farm pest specialist	10	34	17	10	13
Extension/university/State/Federal	34	55	34	30	30
Chemical dealer	30	52	43	30	30
Professional scout	5	57	25	7	15

* indicates too few observations for estimation.

Albemarle-Pamlico Drainage Area: Nutrient management practices, 1992

Practice	Percent of acres in crop				
	Corn	Cotton	Peanuts	Soybeans	Tobacco
Soil nitrogen test	29	65	42	23	22
Tissue analysis	5	5	6	2	1
Manure usage	6	6	*	4	2
<u>Most important factor influencing nitrogen use:</u>					
Fertilizer company recommendation	3	0	5	1	2
Consultant recommendation	1	11	0	2	11
Crop appearance	25	6	16	18	22
Soil/tissue test	23	39	34	16	10
Extension service recommendation	7	15	3	6	8
Standard amount for crop/rotation	34	25	17	26	41

* indicates too few observations for estimation.

Albemarle-Pamlico Drainage Area: Average application rates of pesticides, 1992

Pesticide	Corn		Soybeans		Cotton	
	Lbs/acre	Percent of acres	Lbs/acre	Percent of acres	Lbs/acre	Percent of acres
<u>Herbicides:</u>						
2,4-D	0.4	24	*	*	--	--
Acifluorfen	*	*	0.3	19	--	--
Alachlor	1.8	44	1.8	31	--	--
Atrazine	1.2	73	*	*	--	--
Bentazon	*	*	0.6	12	--	--
Chlorimuron-ethyl	--	--	.02	37	--	--
Fluometuron	--	--	--	--	.9	78
Glyphosate	*	*	.7	15	*	*
Imazaquin	*	*	.1	22	*	*
Metolachlor	1.6	28	1.8	8	*	*
Pendimethalin	*	*	.7	26	.7	52
<u>Insecticides:</u>						
Aldicarb	*	*	*	*	.6	49
Lambda-cyhalothrin	--	--	--	--	.02	46
Terbufos	1.1	23	--	--	--	--
<u>Other:</u>						
Tribufos	--	--	--	--	1.0	34

-- indicates no use reported.

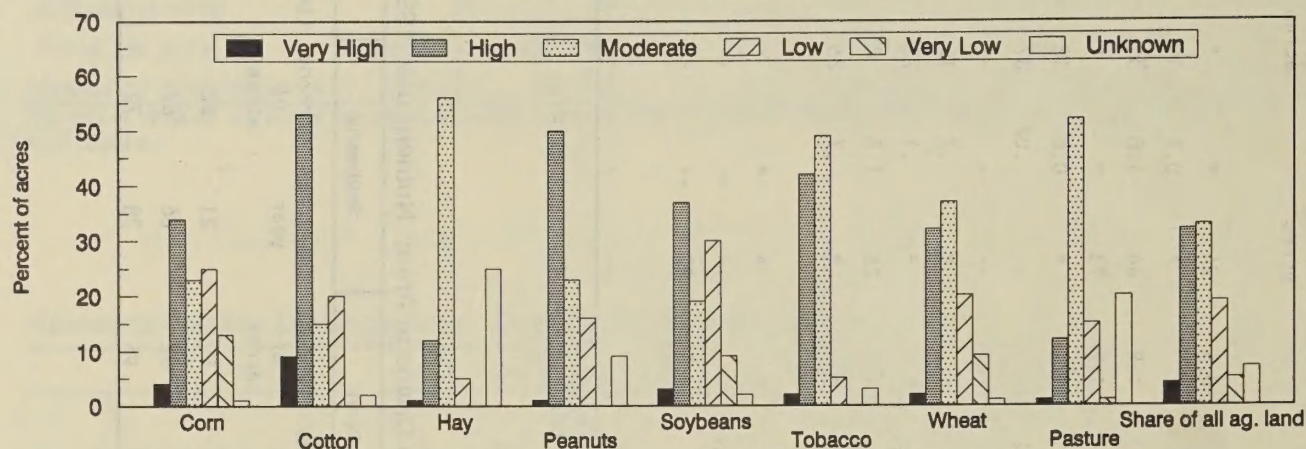
* indicates too few observations for estimation.

Albemarle-Pamlico Drainage Area: Nutrient use, 1992

Nutrient	Corn		Soybeans		Cotton	
	Lbs/acre/year	Percent of acres	Lbs/acre/year	Percent of acres	Lbs/acre/year	Percent of acres
Nitrogen	118	99	21	62	61	99
Phosphate	47	92	26	67	45	92
Potash	104	93	78	72	104	93

Source: 1992 Area Study Survey, Economic Research Service, USDA.

Albemarle-Pamlico Drainage Area: Soil leaching potential index*



Soil leaching potential (SLP) = texture component + organic matter component + pH component

* Potential of soils to leach highly soluble chemicals, based on intrinsic soil properties. Algorithm developed by J.B. Weber and R.L. Warren, North Carolina State University, in J.B. Weber and R.L. Warren. "Herbicide Behavior in Soils: A Pesticide/Soil Ranking System for Minimizing Groundwater Contamination" Proceedings of the Northeastern Weed Science Society, Vol. 46, 1992.

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